



2006 Annual Review of the  
AFRL/VA and AFOSR

**The Ohio State University**

**Collaborative Center of Control Science**



Oct. 19-20, 2006

*(Attachment: Directions and Accommodation Information)*

## **Thursday, Oct. 19: Longaberger Alumni House**

- 8:30am Registration and Continental Breakfast
- 9:00am Opening Remarks  
Siva Banda
- 9:15am Welcome to Collaborative Center of Control Science (CCCS) and  
Program Overview  
Kevin Passino

### **Aerodynamic Flow Control**

- 9:45am Reduced-Order Modeling and Experiments for  
Feedback Flow Control  
Mo Samimy, Marco Debiasi, Edgar Caraballo, Jesse Little, Doug Mitchell
- 10:45am Break
- 11:00am Controller Design for Feedback Flow Control  
Andrea Serrani, Xin Yuan, Cosku Kasnakoglu, Kwiwan Kim
- 12:00pm Lunch

### **Cooperative Control for Autonomous Air Vehicles**

- 1:00pm Cooperative Control Overview  
Kevin Passino
- 1:15pm Distributed Sensor Fusion with Mobile Sensor Agents  
Ümit Özgüner, Zhijun Tang, Xu Lu, Arda Kurt, Qi Chen
- 1:45pm Autonomous Vehicles Experimental Program Overview  
Ümit Özgüner, Keith Redmill, John Martin, George McWilliams
- 2:15pm Implementation of Cooperative Path Planning Methods in an  
Experimental Testbed  
Raúl Ordóñez, Shreecharan Kanchanavally
- 2:45pm Break
- 3:00pm Cooperative Pursuit of Detected and Predicted Threats  
Joe Cruz, Dongxu Li

3:30pm Stable Cooperative Surveillance and Patrol  
Kevin Passino, Jorge Finke, Brandon Moore

### **Space Access and Hypersonic Vehicle Guidance and Control**

4:00pm Robust Model-Based Control Strategies for Air-Breathing Hypersonic Vehicles  
Andrea Serrani, Steve Yurkovich, David Sigthorsson, Lisa Fiorentini, Pete Jankovsky

4:30pm Trajectory Generation on Approach and Landing for RLVs Using Maneuver Primitives  
Raúl Ordóñez, Zhesheng Jiang

### **Poster Session: Sanders Grand Lounge**

5:00pm Posters for Overview of Additional Projects,  
Cooperative Control and Reusable Launch Vehicles

Cooperative Agent Distributions for Prioritized Surveillance  
Jorge Finke

Advances in Data Registration  
Sangil Jwa


Cooperative Vehicle Operations for Patrol  
Brandon Moore

Sensor Placement and Observer Design for Air-Breathing Hypersonic Vehicles  
Pete Jankovsky

5:30pm UAV Bench Demonstration  
Ümit Özgüner, Keith Redmill, John Martin, George McWilliams

6:00pm Adjourn

**Friday, Oct. 20: Aeronautical and Astronautical Research Laboratory (AARL)  
Gas Dynamics and Turbulence Laboratory (GDTL)  
Demonstrations and Evaluation**

- 8:00am Continental Breakfast, Conference Room, GDTL, Rm. 100
- 8:30am Introduction to GDTL and Flow Control Demonstration  
Mo Samimy
- 9:00am Posters for Overview of Additional Projects in  
Aerodynamic Flow Control
- New Project on Feedback Flow Control for High Lift Application  
Jesse Little
- Development of Flow Control Strategies for  
Mitigation of Aero-optic Distortion  
Jacob George
- Development and Application of Novel Plasma Actuators for  
Flow and Acoustic Control  
Jeff Kastner
- 9:30am Demonstrations for Executive Board: Closed-Loop Flow Control  
Discussions on Experimental Plans  
Kihwan Kim, Jesse Little, Edgar Caraballo
- 10:30am Demonstrations for Attendees: Closed-Loop Flow Control  
Kihwan Kim, Jesse Little, Edgar Caraballo
- 10:30am CCCS Executive Board Meeting (closed meeting),  
Conference Room, GDTL, Rm. 100
- 11:30am CCCS Executive Board Feedback to CCCS Investigators  
(open meeting), Conference Room, GDTL, Rm. 100
- 12:00pm Meeting ends
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## Directions and Accommodations

AFRL/VA and AFOSR supported

The Ohio State University

## Collaborative Center of Control Science (CCCS)

### Hotel Information

**The Blackwell**                      <http://www.theblackwell.com/about/>  
2110 Tuttle Park Place  
Columbus, Ohio 43210

Phone: 614-247-4000  
Call for reservations, toll free: 866-247-4003

Location: On the east side of Tuttle Park Place Ave. between Lane Ave. and Woody Hayes Dr. See directions below.

**Holiday Inn on the Lane**                      <http://www.holidayinnosu.com/>  
328 W. Lane Ave.  
Columbus, Ohio 43210

Phone: 614-294-4848  
Call for reservations, toll free: 800-465-4329

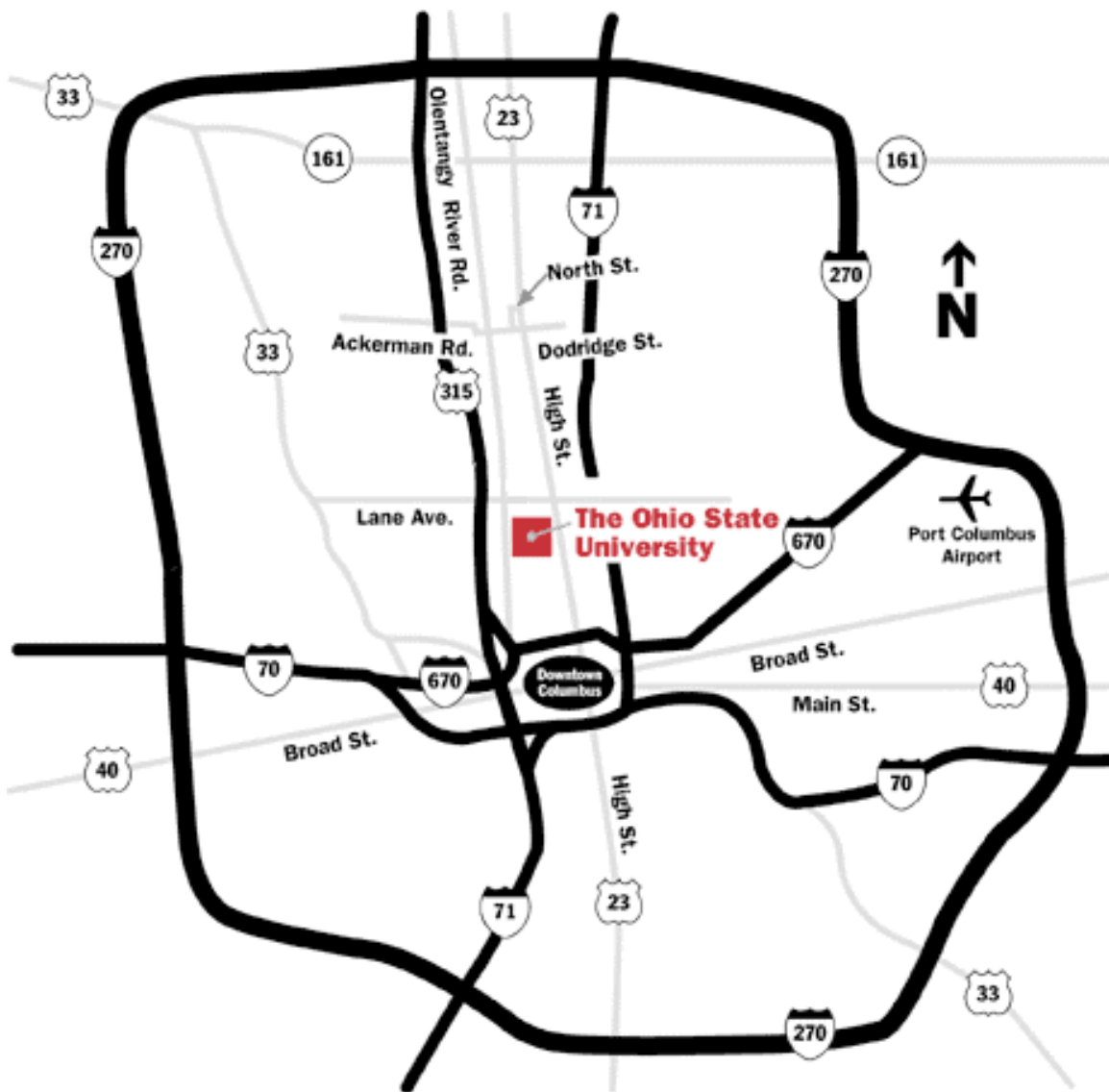
Location: On the north side of Lane Ave., east of 315 (and of Olentangy River Rd.) and just west of Tuttle Park Place Ave. See directions below.

**Alternate Hotel: The University Plaza Hotel** - <http://www.universityplazaosu.com/>  
3110 Olentangy River Rd.  
Columbus, Ohio 43202  
Phone: (614) 267-7461

Location: Go north on Olentangy River Rd. from Lane Ave., about a mile and on right hand side.

For more information on accommodations, see <http://www.osu.edu/visitors/>

## Directions to The Ohio State University\*



### Directions to OSU Campus:

#### From the north:

Take any major highway to I-270. Take I-270 to SR 315 south. From SR 315 south, exit at Lane Avenue and turn left.

#### From the south:

Take any major highway to I-71 north. Take I-71 north to SR 315

north. Exit at Lane Avenue and turn right.

**From the west:**

Take any major highway to I-70 east. Take I-70 east to I-670 east to SR 315 north. Exit at Lane Avenue and turn right.

**From the east:**

Take any major highway to I-70 west. Take I-70 west to SR 315 north. Exit at Lane Avenue and turn right.

**From Port Columbus International Airport:**

Take I-670 west to SR 315 north. Exit at Lane Avenue and turn right.

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\* From OSU Visitor Guide. For more details, if you have access to the web, click [here](#).

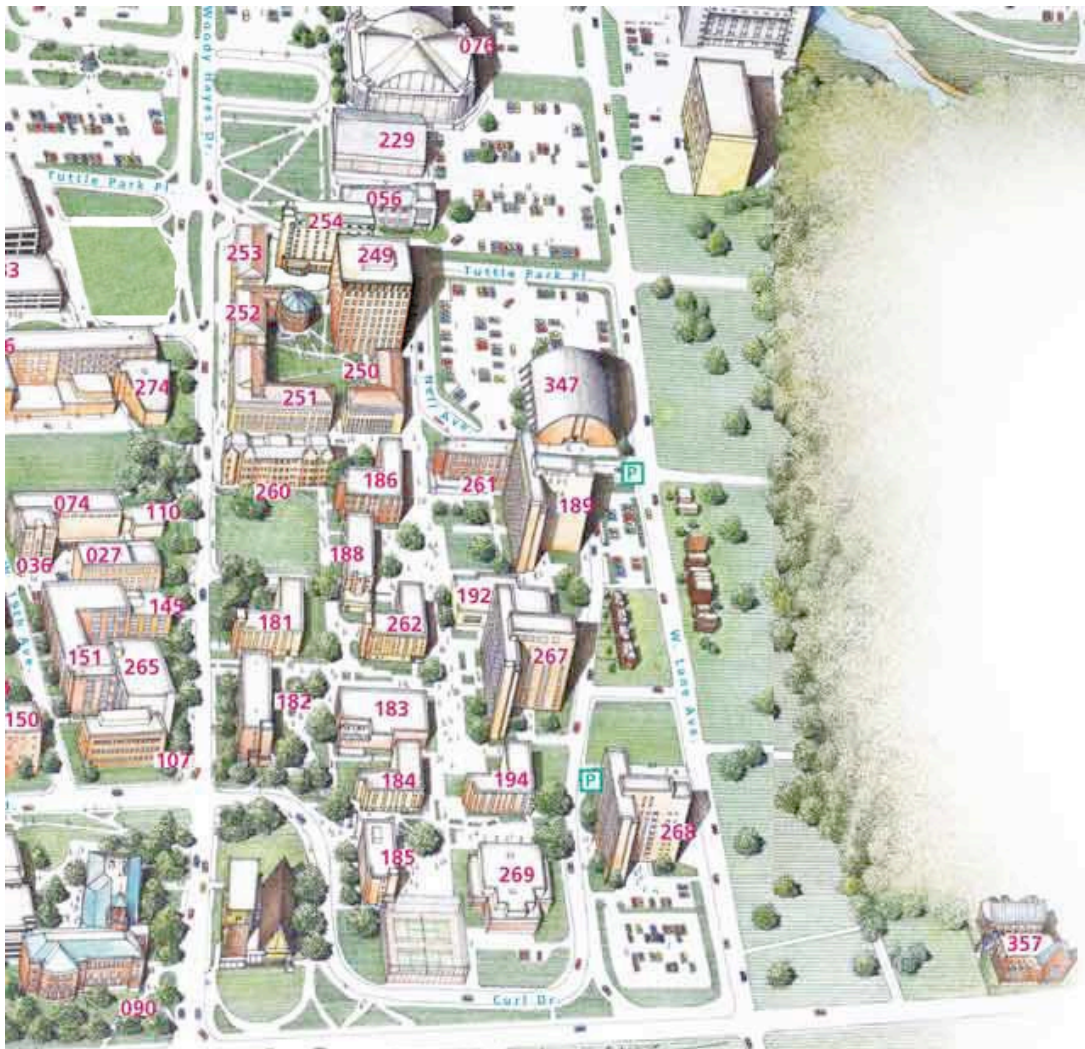
## Directions to The Blackwell Hotel and Holiday Inn

1. Go east on Lane Avenue from SR 315.
2. Holiday Inn is on your right (north) after you cross the river.
3. Blackwell: Continue past the Holiday Inn and take a right on Tuttle Park Place.
4. The Blackwell is on the east side of Tuttle Park place, immediately on your left (i.e., at the corner of Tuttle Park Place and Woody Hayes Dr.).

**See map below for more details:**

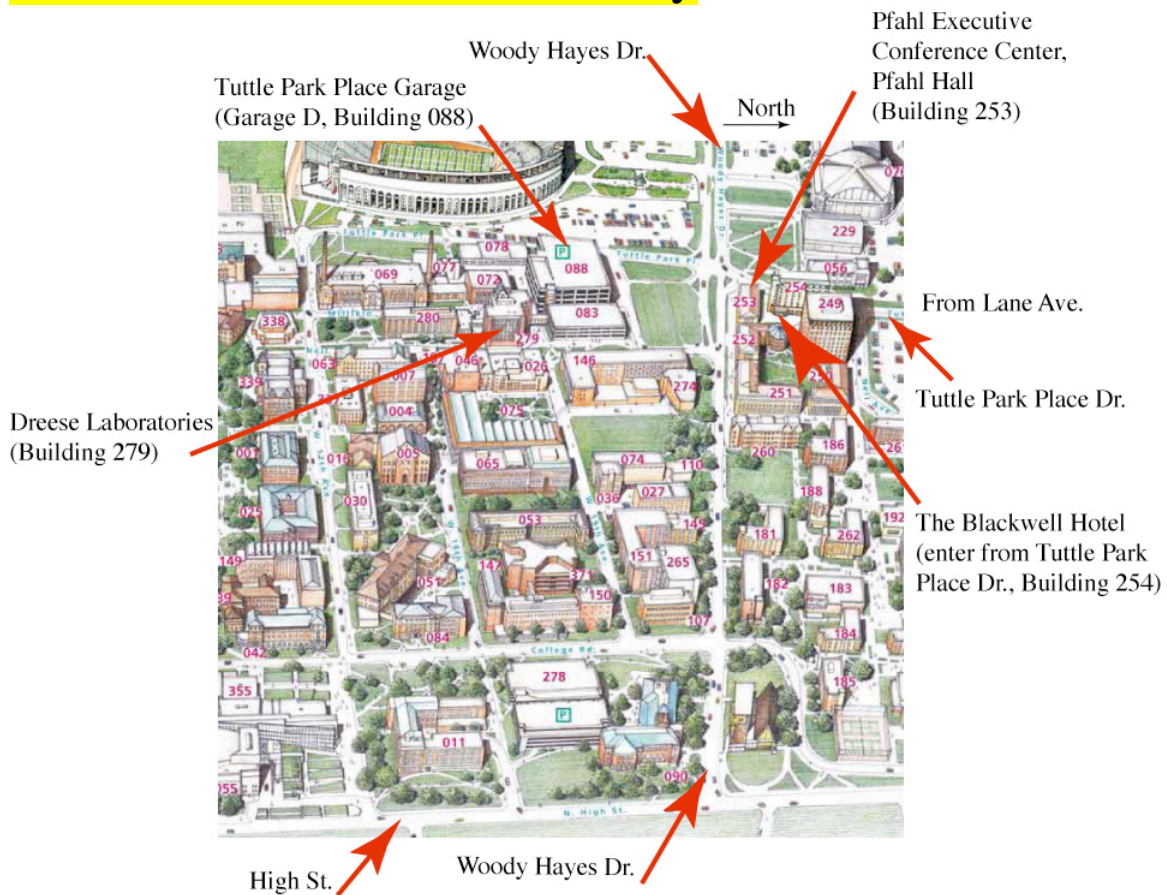
The Blackwell is Building 254

Holiday Inn on the Lane is the cream and white-topped building in the top-right corner of the map below.





## Directions to Dreese Laboratory

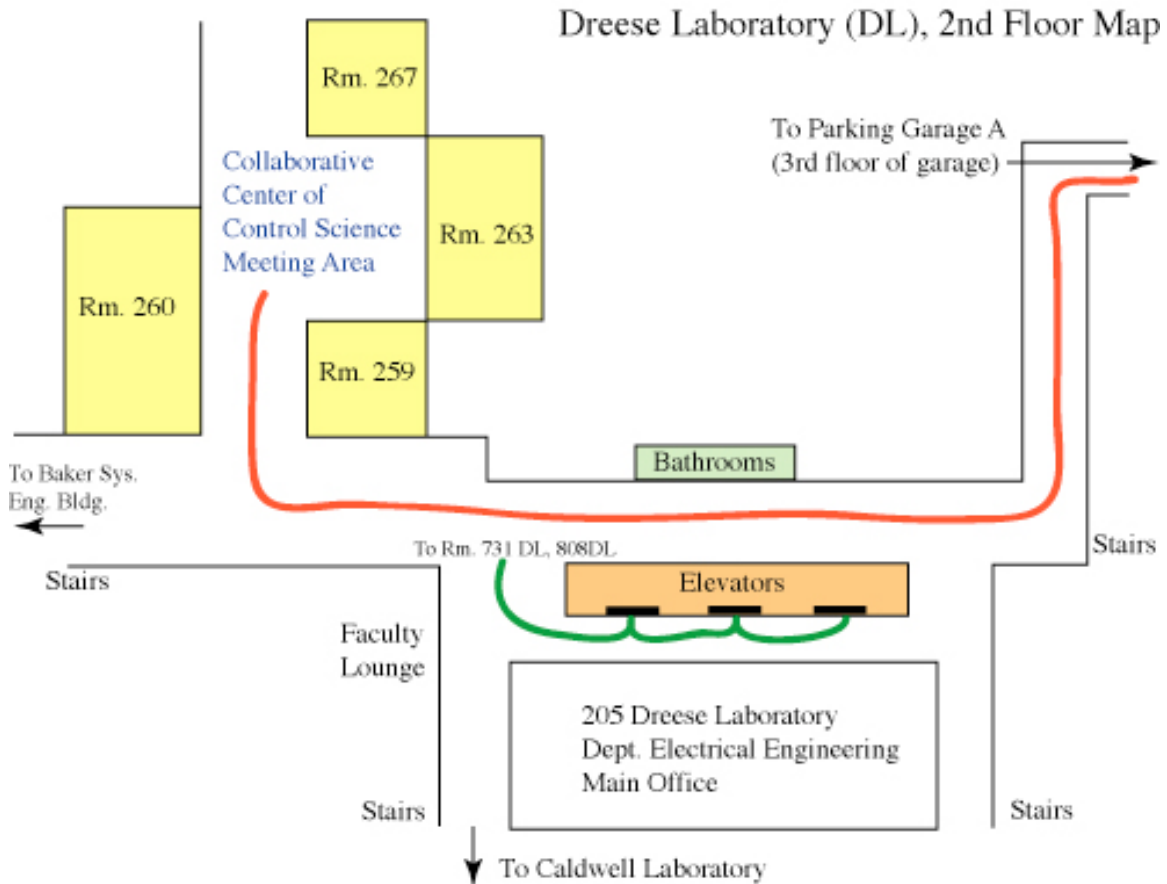


Go east on Lane Avenue from 315.

Turn right on Tuttle Park Place (road next to stadium) and then turn left into Garage D (Tuttle Park Place Garage).

You may walk to Dreese Laboratory, which is nearby, just to the southeast of the Tuttle Park Place Garage (see above map).

## Directions to Dreese Laboratory Second Floor (normally used for 6 Month Review)



## Directions to the Longaberger Alumni House

Start from the above directions to get to Lane Ave.  
Go East on Lane Ave. from SR 315.  
Proceed to Olentangy River Rd. (less than one mile) and take a left  
(i.e., go north) on Olentangy River Rd.  
For the Longaberger Alumni House take the first entrance on the  
right and it is the first building on the right.

For more information, see:

<http://www.ohiostatealumni.org/longaberger/directions.php3>

## Directions to OSU Aeronautical and Astronautical Research Laboratory / Gas Dynamics and Turbulence Laboratory:

Coming from Campus, take SR **315** North, exit at **Bethel Rd.**

Drive *westward* to **Godown Rd.** (about 1 mile).

Turn *right (North)* onto **Godown Rd.**

Drive approximately 0.5 mile, turn *left (West)* onto **West Case Rd.** Drive approximately 1.25 miles.

Just past OSU Airport (Don Scott Field, see below) and the fire department, turn *right* into the Aeronautical and Astronautical Research Laboratory (AARL) parking lot. Park in a visitor parking space. Gas Dynamics and Turbulence Laboratory (GDTL) and GTL are located within AARL. Room 100, the conference room, is located just inside the main entrance to the left.

